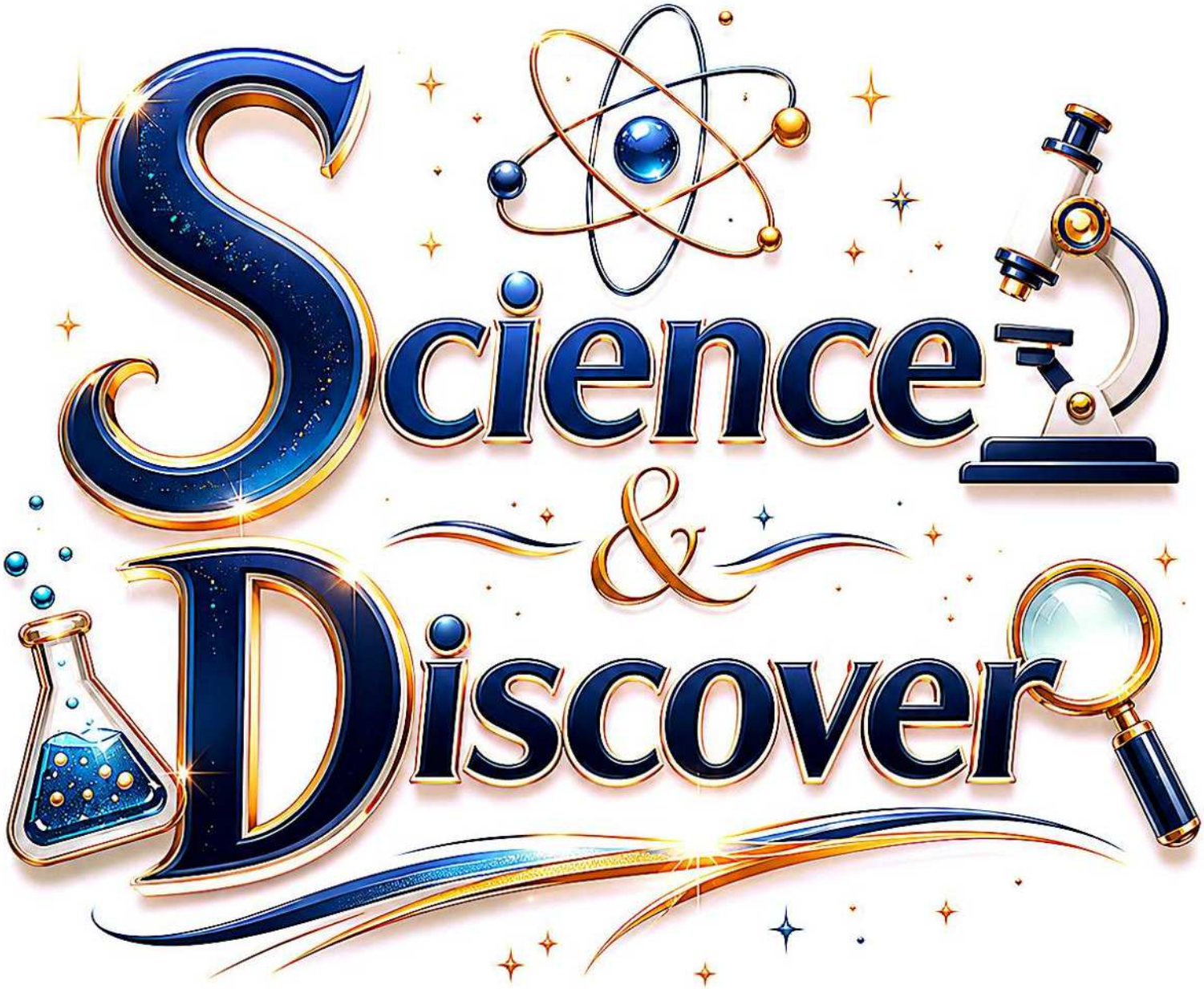

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1 Assess Yourself

Science and Discover

1 Choose the correct answer from the options in parentheses:

1- The candle ignites. . . . . When a container with a lit candle is covered,

(increases - decreases - is unaffected - all of the above)

2 What happens when:

1. The lid of a container with a lit gas stove is lifted. .....
2. No air reaches a lit candle. .....
3. A large amount of air enters a lit candle. .....
4. A large amount of sand is placed on a lit gas cylinder. .....

3 (a) Complete the following statements with the appropriate words:

1- Necessary for the combustion process .....

2- Increasing the amount of air increases the process. .....

(b) State the scientific reason (explain):

1. 1- Combustion does not occur on the surface of the moon. .....
2. 2- The flame increases when air reaches it. .....
3. 3- A burning piece of paper goes out when air is prevented from reaching it. .....
4. 4- A lit candle in a jar goes out after it has been covered for a while. .....

4 (a) Put a (√) or an (x) mark next to the following statement:

☑ Combustion occurs in the absence of air. ☐

5 (b) Study the pictures opposite and then answer:

1- In which jar will the candle stay burning the longest?

.....

.....

2- Explain your answer.

.....

.....

.....

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2 Assess Yourself 2

Science and Discover

1 (a) Choose the correct answer from the options in parentheses:

- Which of the following gases helps combustion?

(Nitrogen - Oxygen - Carbon dioxide - Hydrogen)

(b) What happens when:

1- There is no oxygen in the atmosphere.

.....

2- The percentage of oxygen in the atmosphere increases.

.....

3- A lit candle is placed in a container filled with oxygen.

.....

4- A lit candle is placed in a container filled with nitrogen.

.....

2 (a) Put a (✓) next to the correct statement and an (X) next to the incorrect statement:

☐ ☐ 1- The atmosphere consists of only one gas.

☐ ☐ 2- Nitrogen gas represents about (78%) of the volume of the atmosphere.

(b) State the scientific reason (explain):

1- Oxygen gas is essential for humans.

.....

.....

2- It is impossible to burn a piece of paper in an oxygen-free environment.

.....

.....

3- Carbon dioxide gas is used to extinguish fires.

.....

.....

4- A lit candle goes out when placed in a jar containing carbon dioxide gas.

.....

.....

3 (1) Correct the underlined words in the following statement:

- Oxygen gas represents approximately 0.04% of the volume of atmospheric air.

.....

(B) Compare:

1- Oxygen gas and carbon dioxide gas in terms of: (their percentage in the atmosphere).

.....

.....

2- A candle burning in a container of oxygen gas and another burning in a container of carbon dioxide gas.

.....

.....

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Test for Lessons (1-1) and (1-2)

Science and Discover

1 Question (a) Choose the correct answer from the options in parentheses:

Which of the following is necessary for the combustion process to continue?

Fresh air – A tight cover – Absence of air – All of the above

2 (b) What happens if:

1. There is no oxygen in the air. .....
2. A lit candle is covered with a tight metal lid. .....
3. The proportion of oxygen becomes greater than the proportions of other gases. .....
4. A burnt piece of paper is placed in a jar with holes at the top and bottom. .....

3 Question 2 (a) Complete the following statements with the appropriate words:

1- For the combustion process to continue, fresh air must be renewed _____.

2- Carbon dioxide represents approximately _____ % of the volume of air.

b State the scientific reason (explain):

1. The presence of air vents under a gas stove. .....
2. The flame burns strongly in the presence of oxygen. .....
3. Carbon dioxide is used in fire extinguishers. .....
4. A match cannot burn in an oxygen-free environment. .....

4 Question 3 (a) Put a (✓) or an (x) next to the following statement:

☐ The proportions of the components of atmospheric air are equal.

5 (b) Compare:

1- Oxygen and nitrogen in terms of: (their proportion in the atmosphere). .....

2- A candle burning in an open jar and another in a closed jar in terms of: (burning time only). .....

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3 Rate yourself

Science and Discover

1 (a) Choose the correct answer from the options in parentheses:

Clear limewater turns into a white liquid when a gas is passed through it.

(Oxygen - Nitrogen - Carbon Dioxide - Hydrogen)

(b) State the scientific reason (explain):

1- It is necessary to wear protective goggles while testing limewater.

.....

2- Clear limewater becomes cloudy in a test tube containing a lit candle.

.....

3- The amount of nitrogen gas in the air does not change before and after the combustion process.

.....

4- Clear lime water is used to detect the presence of carbon dioxide gas.

.....

2 (a) Complete the following sentences with the appropriate words:

To detect the presence of carbon dioxide gas ..... 1 - is used.

The amount of gas increases ..... 2 - After combustion, the amount of gas decreases

(b) What happens when...?

1- Mix oxygen with clear lime water. .....

2- Shake a container of limewater after a piece of paper has burned inside the container. .....

3- Place a lit candle in a sealed container filled with clear limewater. .....

4- Do not leave ventilation openings at the top of rooms that contain gas-fired ovens. .....

3 (a) Put a mark (√) or an (x) mark next to the following statement:

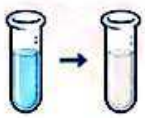
☐ ☐ After combustion, the amount of nitrogen gas in the air increases.

4 (b) Compare between:

1- Oxygen and carbon dioxide
In terms of: (the quantity before and after the candle burns).

.....

.....



2- Lime water before and after adding carbon dioxide gas
In terms of: (color only).

.....

.....

3- Air before and after combustion
In terms of: (Composition only).

.....

.....

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1 Complete the following blanks with the appropriate words:

1- For the combustion process to continue, it must ..... air continuously.

2- If the air is not renewed, then things ..... of combustion after a period of time.

Question on the experiment of burning a candle inside a jar

1- How does the amount of oxygen gas change after the combustion process?

.....

2- How does the amount of carbon dioxide gas change after the combustion process?

.....

3- What happens to the candle flame if a lid is placed on the jar to prevent air from entering and escaping?

.....

2 Answer the following:

1- What gas is present in the air and necessary for combustion to occur?

.....

2- How does the amount of oxygen gas change after the combustion process?

.....

3- How does the amount of carbon dioxide gas change after the combustion process?

.....

4- In the experiment of burning a candle inside a bottle, what happens to the flame when the bottle is closed, preventing air from being renewed inside it?

.....

3 What is it?

1- What gas is present in the air and necessary for combustion to occur?

.....

2- The gas whose quantity increased in the air after the combustion process.

.....

3- The gas whose quantity has decreased in the air after the combustion process.

.....

4- The clear, transparent liquid used to detect the presence of carbon dioxide gas.

.....

4 Put a check (✓) in front of the correct statement and an (×) in front of the wrong one:

1- Combustion of a candle continues inside a closed jar.

2- The sun and wind are renewed sources of energy.

3- Water used to limewater for detection of nitrogen gas.

4- The percentage of oxygen in the air increases after combustion.

5- Carbon dioxide gas represents about 0.04% of the volume of air.

5 Give a reason for each of the following:

1- Oxygen is essential for the combustion process.

.....

2- A candle flame does not continue to burn inside a closed jar.

.....

3- Air must enter and exit continuously for the combustion process to continue.

.....

4- Water that is used to limewater for detection of carbon dioxide gas.

.....

5- The percentage of carbon dioxide gas in air increases after combustion.

.....

6- The percentage of oxygen in the surrounding medium decreases after combustion.

.....

6 What happens if?

1- The rate of combustion increases.

.....

2- Carbon dioxide gas is passed into limewater.

.....

3- Oxygen gas is passed over a piece of magnesium.

.....

4- An opening was made in the base of a closed candle jar.

.....

5- We put a lit candle in a jar containing oxygen gas.

.....

6- We put a lit candle in a jar containing carbon dioxide gas.

.....

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7 Explain the following:

1. Explain the importance of establishing the Benban Solar Power Station.

.....

2. The role of oxygen gas in the combustion process.

.....

3. The importance of fresh airflow for the combustion process.

.....

4. Decrease in oxygen gas and increase in carbon dioxide gas after combustion.

.....

5. The reason for the flame of a candle going out inside a closed jar after a short period.

.....

6. Using limewater to detect the presence of carbon dioxide gas.

.....

8 Look at the pictures, then answer:

1- Look at the picture, then answer:

(a) Name the tool(s) shown in the picture?

.....

(b) What is this tool used for?

.....

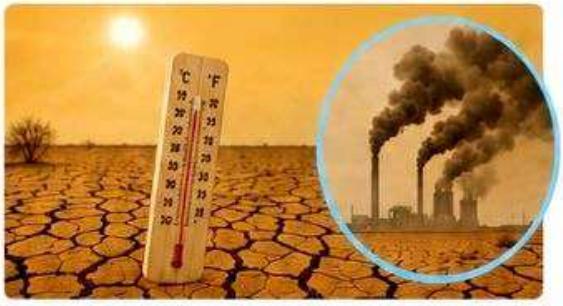
2- Study the opposite picture, then answer:

(a) Which jar contains oxygen gas? Why?

.....

(b) Which jar contains carbon dioxide gas? Why?

.....



3- Look at the picture, then answer:

(a) How do combustion processes affect air pollution?

.....

(b) What is the name of the resulting phenomenon from the increase of air pollutants?

.....

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